

Chapter 10

Using Assessment to Promote Critical Thinking and Problem Solving Skills in Adults

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ABSTRACT

Adult education in the twenty-first century is tasked with developing skilled workers with critical thinking and problem solving skills that will allow them to succeed in a fast-paced and rapidly changing economy. Most adult education takes place in structured educational settings and course-level assessment is seen to be the strongest factor directing students' time and energy in such settings. Therefore, course-level assessment methods, which are the grading practices and methods within a course environment, should be used to promote critical thinking and problem solving skills in adults. This chapter describes formative and summative assessment methods and techniques that promote these higher order thinking skills in adults.

INTRODUCTION

Today's adult learners need a complex set of thinking skills in order to succeed in the fast-paced twenty-first century economy. The current work environment is shaped by rapid changes in technology, an increasingly interconnected world, and easy access to information. Workers in every sector will increasingly rely on thinking skills that help them evaluate resources, consider different points of view, and make decisions based

on complex information. The development of these higher cognitive level thinking skills is a purposeful process that requires multiple practice opportunities, ongoing support, and many years to cultivate. Yet adult workers are trained in education settings that often do not focus on the development of thinking skills such as critical thinking and problem solving.

How do we encourage thinking skills among adults? Within structured educational settings, course-level assessment is seen to be the strongest factor directing students' time and energy. Course-level assessment consists of the grad-

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ing methods and practices within a course and strongly influences what and how adults learn. The purpose of this chapter is to establish, for adult learning environments, the important link between course-level assessment methods and the development of critical thinking and problem solving skills, and to provide practical assessment strategies and techniques to help develop these skills. After first discussing the importance of developing higher order thinking skills in adult learners and the link between these skills and course-level assessment, this chapter will define the two most common higher order thinking skills; critical thinking and problem solving. The focus will then shift to describe specific formative and summative assessment methods that can be used to promote these skills. The chapter will end by examining some future topics for exploration in this area.

THE NEED FOR HIGHER ORDER THINKING SKILLS

Adult education in the twenty-first century is tasked with developing skilled workers with critical thinking and problem solving skills that will allow them to succeed in a fast-paced and rapidly changing economy. Technological advancements and globalization are changing nearly every aspect of the workforce. Our world is transitioning towards a society and economy based on ideas, creativity, and readily available but constantly changing information. The future workforce will depend on workers that are innovative, flexible, adaptable, and able to retrain themselves to support new industries (Council for Adult and Experiential Learning, 2008). In 1950 it was estimated that 80% of jobs in the United States involved unskilled labor, but in the next 10 to 15 years, the vast majority of job openings will be classified as “skilled” (Council on Competitiveness, 2008).

Skilled workers need a different kind of education than one that is based on the accumulation of information. Technological innovations have made information readily available to anyone with a computer and Internet access. Skilled workers need the ability to process complex information, interpret and make judgments about information, and make decisions based on multiple sources of information. The kind of education required to prepare productive twenty-first century workers “must empower the individual to think as an autonomous agent in a collaborative context rather than to uncritically act on the received ideas and judgments of others” (Mezirow, 1997). Adult education needs to focus on the development of higher order thinking skills such as critical thinking and problem solving.

In addition to economic needs for more skilled adult workers, adults themselves stand to gain from the development of higher order thinking skills. Higher educational levels among adults correlate with many personal and societal benefits, including civic engagement, health, and higher earnings (Council for Adult and Experiential Learning, 2008). Further, it appears it is the higher cognitive skills themselves, rather than higher education levels, that translate to these benefits (Tyler, Murnane, & Willett, 2000). More than just a certification or degree, producing more adults with higher order thinking skills is beneficial to individuals and society at large.

Yet adults are very much in need of thinking skill development. Even in adults, levels of critical thinking and problem solving can be low. Adult literacy assessments show that only thirteen percent of adults can perform complex and challenging literacy activities such as synthesizing information and making complex inferences in complex texts, or analyzing multiple pieces of information located in complex documents (American Institutes for Research, 2006). The extensive research into reflective judgment, one important aspect of critical thinking, shows that both traditional and non-traditional students start

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